

PROGRAM FOR ARTERIAL SYSTEM SYNCHRONIZATION (PASS) FY12/13 CYCLE

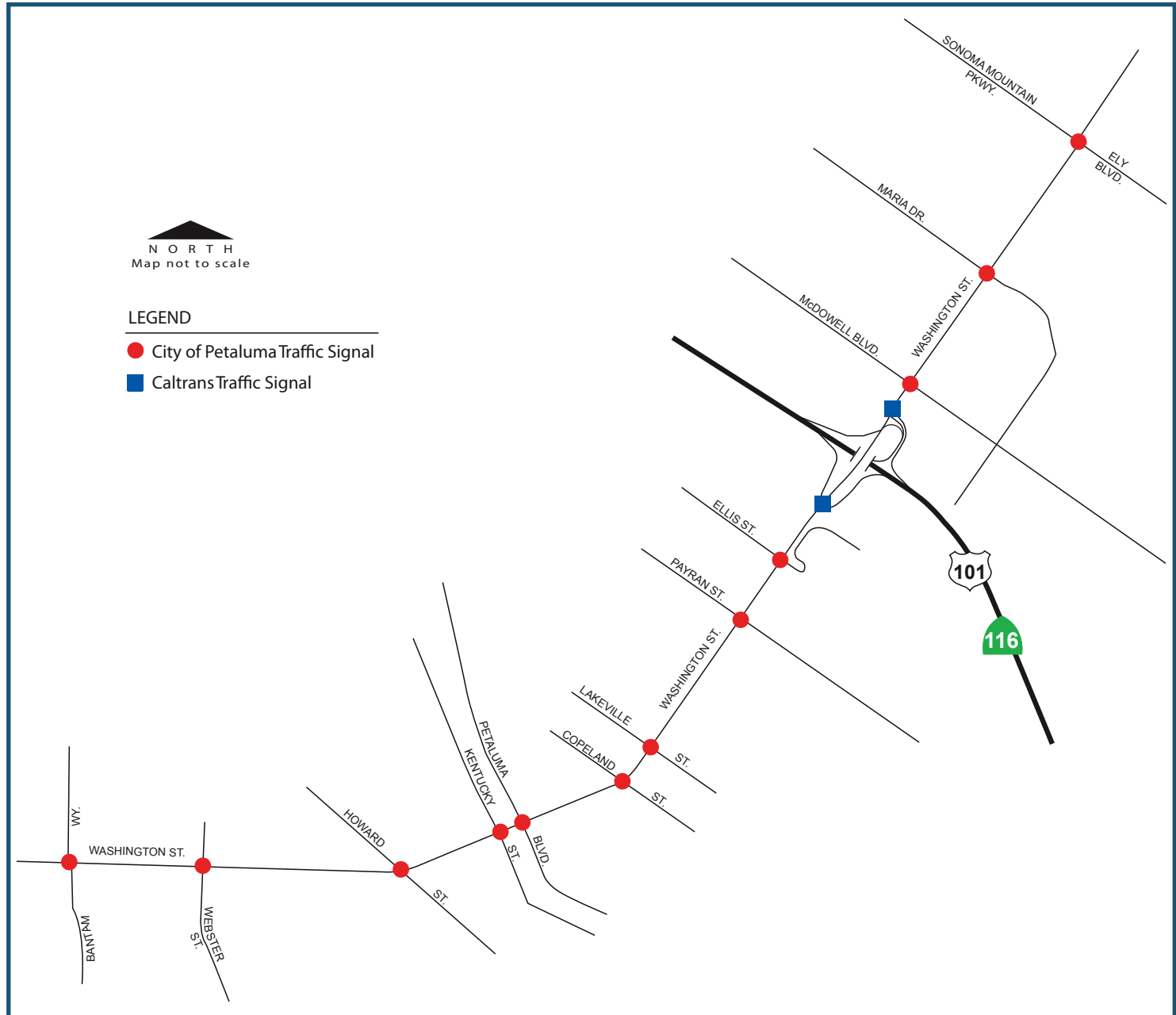
Washington St ■ Traffic Signal Timing Project

City of Petaluma | Caltrans | Metropolitan Transportation Commission

PROJECT OVERVIEW

The City of Petaluma received a Program for Arterial Synchronization (PASS) grant from the Metropolitan Transportation Commission to develop and implement new signal timings plans for 14 signals along Washington St and Bodega Ave. The goal of this project was to develop traffic signal timing plans for weekday AM, midday, and PM peak periods to achieve operational efficiency with the existing capacity constraints. Additional plans were developed to accommodate the anticipated lane configuration changes at the Caltrans intersections. These will be implemented after the completion of the construction activity.

This PASS project involved the completion of the following major tasks: collecting traffic volumes (ADT) and turning movement counts, including bike and pedestrian counts, at all project intersections; analyzing this traffic data including collision data to develop optimized signal timing plans; implementing and fine-tuning the plans in the field; and conducting travel time surveys to analyze the performance of the new timing plans, including the effects on transit. The performance evaluation results show reduced congestion and signal delay, and improved travel time and safety for all modes along this major arterial in the City of Petaluma.



POST-CONSTRUCTION TIMING PLANS

Since there were two intersection improvement projects that would change the lane configuration and traffic patterns at the Washington St and US 101 Ramps, the PASS project developed timing plans for immediate deployment to alleviate congestion during construction, and post-construction timing plans to implement after the completion of the projects.

BENEFITS TO VARIOUS MODES



BENEFITS TO PEDESTRIANS:

The Walk timing and Flash Don't Walk clearance timing parameters were updated to provide adequate time for children and seniors to safely cross the intersections. The updated timing parameters are expected to enhance the central business district crossings at Washington St/Petaluma Blvd and Washington St/Kentucky St. The increased pedestrian timings had a slight impact on transit travel times but not a significant impact.



BENEFITS TO TRAFFIC SAFETY:

To enhance traffic safety, the yellow clearance timing parameters were updated based on posted speed limits at nine intersections along Washington St.



BENEFITS TO BICYCLISTS: Per the new California policy directive, the minimum green time was increased for the through movements at all

fourteen-study intersections to enhance traffic safety for bicyclists traveling along the Washington St corridor from Ely Blvd to Bantam Way.

Project Costs

Consultant Costs (Weekday, Transit Evaluation)	\$46,930
Other Project Costs (Communications Equipment)	\$1,000
Agency Staff Costs (Estimate)	\$2,808
Total Costs	\$50,738

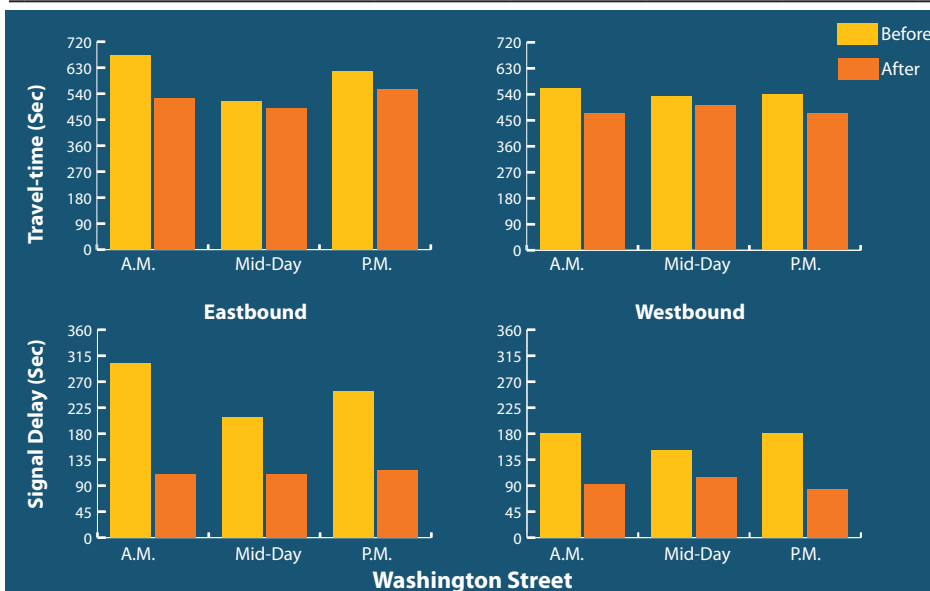
Project Benefits

Measures	Annual Average		Lifetime (5 Years)	
	Savings	Monetized Savings	Savings	Monetized Savings
Travel Time Savings	10,648 hrs.	\$203,247	53,241 hrs.	\$1,016,237
Fuel Consumption Savings	20,733 gal.	\$83,320	103,664 gal.	\$416,601
ROG Emissions Reduction	0.16 tons	\$197	0.78 tons	\$984
NOx Emissions Reduction	0.19 tons	\$3,487	0.97 tons	\$17,437
PM10 Emissions Reduction	0.03 tons	\$4,317	0.15 tons	\$21,586
CO Emissions Reduction	0.9 tons	\$70	4.51 tons	\$348
Total Lifetime Benefits				\$1,473,194
Transit Travel Time Savings	(27) hrs.	(\$513)	(134) hrs.	(\$2,567)
Total Lifetime Benefits with Transit				\$1,470,628

Overall Project Benefits	Auto	Transit
Average Decrease in Travel Time	12%	(2%)
Average Speed Increase	14%	(2%)
Average Fuel Savings	9%	N/A
Average Reduction in Signal Delay	50%	N/A
Average Reduction in Number of Stops	25%	N/A

Overall Benefit-Cost Ratio

37:1



PROJECT BENEFITS SUMMARY



Average Reduction in Auto Signal Delay: 50%

Average Reduction in Number of Stops: 25%

Auto Fuel Consumption Savings: 9% or 103,664 gallons



Total Emissions Reduced (ROG, Nox, PM10, CO): 6.41 tons

Auto Travel Time Savings: 12% or 53,241 hours



Average Transit Travel Time delay: 2%

Overall Project Benefit-cost Ratio = 37:1



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